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Steven E. Shapiro, Esq
MITCHELL, SILBERBERG & KNUPP LLP
11377 West Olympic Boulevard
Los Angeles, CA 90064

EXAMINER	
NGUYEN, NGA B	
ART UNIT	**PAPER NUMBER**
3628	

DATE MAILED: 12/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/692,748	FINDLAY ET AL.
	Examiner	Art Unit
	Nga B. Nguyen	3628

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 June 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-35* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-35* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This Office Action is the answer to the Amendment filed on June 14, 2004, which paper has been placed of record in the file.

2. Claims 33-35 have been added. Claims 1-35 are pending in this application.

Response to Arguments/Amendment

3. Applicant's arguments with respect to claims 1-30 based on 35 USC § 101 rejection have been considered and are persuasive. Applicant amends the claims to recite the use of a computer to execute computer-executable process steps for performing certain of the steps in the claims, thus, overcomes the 35 USC § 101 in the previous office action. Therefore, examiner withdraws 35 USC § 101 with respect to claims 1-30.

4. Applicant's arguments with respect to claims 1-35 based on prior arts rejection (Gatto, U.S Patent No. 6,681,211) have been considered but are not persuasive.

In the arguments, applicant stated that Gatto does not disclose many of the features or limitations recited in the independent claims (claims 1, 31, 32). Examiner respectfully disagrees. Even if Gatto uses an entirely different approach than that of the present invention, the series of steps recited in the claims does not distinguish over Gatto. See explains details below.

Regarding to claim 1, step (a) recites "identifying a group of exogenous variables that are likely to influence observed prices of an asset". In the arguments, applicant stated that Gatto's factors are not processed by a computer, a computer-

executable process step, or any other external means for that matter. Examiner disagrees. See Gatto column 8, lines 3-40 and figure 1, the server system 160 is programmed with software that implements the various features and function, column 19, lines 15-35 and figures 13-18, the server system 160 displays the factors template (e.g. Accuracy 1, Accuracy 2, All Star, Broke List, Experience, Estimate Age, etc.) to the user, also column 24, lines 21, the server system 160 stores models included a plurality of factors and applies the factors to the estimates specified by the user to produce an estimate based on the model, thus the Gatto's factors are processed by the server system 160 and a computer-executable process. Note that the "identifying" are not required to be performed by the computer, thus the "identifying" may be performed by the user. In Gatto, the system allows the user to identify the factors to include in a model, Gattor's factors as well as the N-scores and with assigned to such factors are selected by the user in order to create a model which is equivalent to the formula as recited in the claims (column 17, line 23-column 18, line 60). Thus, in Gatto, the user identifies a group of factors that are likely to influence observed prices of a stock. Therefore, Gatto satisfies step (a) in the claims. Moreover, even if Gatto's model is created is entirely different than the way in which the recited formula is obtained in the present invention, the recited steps in the claims does not distinguish over Gatto.

Step (b) recites "utilizing a computer to execute computer-executable process steps". See Gatto column 8, lines 3-40 and figure 1, the server system 160 is programmed with software that implements the various features and function to process historical information, to allow the user create a model, apply the model against the

historical information to produce the enhanced composite prediction, etc. Therefore, Gatto satisfies step (b) in the claims.

Step (i) recites "process historical data for value of the exogenous variables and historical data for the observed prices of the asset over a time period to obtain a formula for calculating price estimates for the asset as a function of the exogenous variables". In the arguments, applicant stated that Gatto does not teach anything at all about processing historical data to obtain any kind of formula. Examiner disagrees. See Gatto column 23, lines 1-35, when creating a new model, the user can adjust the factors included in the model based on the historical information for each analyst, the calculation of an adjustment factor is based on upon a comparison of the historical earnings estimates issued by an analyst, for a given security over a particular time period, thus a new model is created upon processing historical data. Also, see column 11, lines 10-52, the user can view the historical performance of a selected security by using The History/Chart module, and then the user can select a model and view estimates generated by applying the model at any point in time prior to the period report date. Therefore, Gatto satisfies step (i) in the claims.

Step (ii) recites "calculate the formula using an input set of observed values for the exogenous variable at given point in time, so as to obtain a price estimate for the asset at the given point in time". Gatto teaches that the obtained formula is calculated using an input set of observed values for the exogenous variables, e.g. see, column 24, lines 17-27, the user selects factors to include in a model, the user can run a model against the historical database, the server applies the factors to the estimates specified

by the user and produces an estimate base on the model, thus the created model is calculated using the factors inputted by the user. Therefore, Gatto satisfies step (ii) in the claims.

Step (iii) recites "determine a similarity measure by comparing the price estimate from the asset at the given point in time to the observed price for the asset at the given point in time". In the arguments, applicant stated that Gatto's actual forecasting apparently does not rely upon any comparison or similarity measure. Examiner disagrees. See Gatto column 11, lines 45-52, column 12, lines 37-45, column 26, lines 30-35, the user can compares the results of the selected model with selected analysts, consensus and other estimates at the given point in time. Therefore, Gatto satisfies step (iii) in the claims.

Step (c) recites "forecasting a direction in which the observed price of the asset will move based on the similarity measure". See Gatto column 18, lines 55-60, the model is applied to the estimates to produce the enhanced composite estimate, then comparing the enhanced composite estimate with the consensus, e.g. the enhanced composite estimate differs from the consensus by 0.11 or nearly 10%, this signals that the stock is undervalued, thus by comparing the enhanced composite estimate with the consensus, the user can forecast the direction in which the observed price of the stock will move. Therefore, Gatto satisfies step (c) in the claims.

Moreover, in Gatto, by conducting a backtest a user may refine a model to better predict earnings, thus, the result of performing a backtest is to serve better of prediction model, the resulting estimate typically is more accurate in predicting a stock's earnings

because it has excluded old, less reliable, estimates (column 22, lines 45). Thus the results of Gatto's calculation are used for improving the ability to forecast a stock price, thus Gatto' calculation has the same results of the calculation in the present claims, which is used for forecasting a stock price.

Therefore, Gatto discloses every step recited in claim 1 as discussed above.

Regarding to claims 2-3, the Gatto's factors selected in developing a model are not just analyst factors, the user permits to identify a group of stocks (a stock set) satisfying the rules, e.g. specifying stocks with a market capitalization in the top of all stocks and a PE ration less than 20, stock sets are created by different companies (column 10, lines 5-52), thus the sets of stocks are identified by the user to include in the model, the model also includes e.g. Estimate Age factor that is equivalent to macroeconomic factor (column 22, lines 34-52). Moreover, as discussed above, the claim does not require the factors are identified by the computer, Gatto permits the user identifies the factors included in a model, thus Gatto satisfies the claims.

Regarding to claim 4, applicant stated that Gatto does not teach anything at all about performing a stepwise regression. Examiner disagrees. See the present specification page 7, lines 3-12, a stepwise regression is performed by estimating a model and evaluating the accuracy of such models and select the model that provide the best fit. The same in Gatto, see column 26, lines 30-35, the user estimates a new model and evaluates the accuracy of the model by testing it against historical data for a single stock and compares its accuracy with the consensus in the History Chart, also column 26, lines 59-65, the user may chart its estimate record for any stock's when

developing a model and find out instantly if the model is outperforming the consensus, detects weak areas in the model and go back to refine the model, thus the user can develops a model that provide the best fit. Therefore, Gatto does use a stepwise regression in estimating a model.

Regarding to claim 6, applicant stated that nothing or any portion of Gatto appears to mention statistical clustering. Examiner disagrees. See Gatto column 20, lines 8-46, the user has the ability to define and use cluster detection factors in Cluster Definition area 2140, e.g. the user may specify the minimum number of new estimates or qualifying revisions that are required to define a cluster, the number of analysts needed to define a cluster, a percentage of analysts, following the stock, etc., thus the user identifies the factors by performing a statistical clustering technique. Note that the claim does not require the factors are identified by the computer, Gatto permits the user identifies the factors by using a statistical clustering technique, thus Gatto satisfies the claim.

Regarding to claim 33-35, applicant stated that Gatto does not teach the new feature added "the forecasting based on the similarity measure is performed by evaluating the similarity measure as a measurement of changes due to factors that are not accounted for by the exogenous variables. Examiner disagrees. See Gatto column 23, lines 1-67, the user may specify adjustments based on one or more factors, the system evaluates and measures the changes of the factors by calculating the adjustment factor which is equivalent to the factors that are not accounted for by the exogenous variables recited in the claims. Therefore, Gatto satisfies the claims.

In conclusion, for the reason stated above, examiner decides to maintain the rejection based on the Gatto reference as indicated in the previous office action (also see details below) and make this office action FINAL.

5. Applicant's amendment necessitated the new grounds of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States

only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1-19 and 21-35 are rejected under 35 U.S.C. 102(e) as being anticipated by Gatto, U.S. Patent No. 6,681,211.

Regarding to claim 1, Gatto discloses a method for forecasting the direction in which the price of an asset will move, the method comprising:

(a) identifying a group of exogenous variables that are likely to influence observed prices of an asset (column 19, lines 10-48, identifying the factors for a model);

(b) utilizing a computer to execute computer-executable process steps (column 8, lines 3-40 and figure 1, the server system 160 is programmed with software that implements the various features and function to process historical information) that include steps to:

(i) process historical data for value of the exogenous variables and historical data for the observed prices of the asset over a time period to obtain a formula for calculating price estimates for the asset as a function of the exogenous variables (column 11, lines 10-52, the user can view the historical performance of a selected security by using The History/Chart module, and then the user can select a model and view estimates generated by applying the model at any point in time prior to the period report date);

(ii) calculate the formula using an input set of observed values for the exogenous variable at given point in time, so as to obtain a price estimate for the asset at the given point in time (column 11, line 62-column 12, line 37; column 24, lines 17-27, the user select factors to include in a model, the user can run a model against the

historical database, the server applies the factors to the estimates specified by the user and produces an estimate base on the model, thus the created model is calculated using the factors inputted by the user);

(iii) determine a similarity measure by comparing the price estimate from the asset at the given point in time to the observed price for the asset at the given point in time (column 11, lines 45-52, column 12, lines 37-45, column 26, lines 30-35, the user can compares the results of the selected model with selected analysts, consensus and other estimates at the given point in time); and

(c) forecasting a direction in which the observed price of the asset will move based on the similarity measure (column 18, lines 55-60, the model is applied to the estimates to produce the enhanced composite estimate, then comparing the enhanced composite estimate with the consensus, e.g. the enhanced composite estimate differs from the consensus by 0.11 or nearly 10%, this signals that the stock is undervalued, thus by comparing the enhanced composite estimate with the consensus, the user can forecast the direction in which the observed price of the stock will move).

Regarding to claim 2, Gatto discloses the asset is a stock issued by a company doing business in a particular industry, and wherein a substantial number of the exogenous variables reflect prices of stocks issued by other companies that are also doing business in the particular industry (column 9, lines 53-63 and column 10, lines 20-52).

Regarding to claim 3, Gatto discloses the exogenous variables include macroeconomic variables (column 22, lines 34-52; Estimate Age factor).

Regarding to claim 4, Gatto discloses at least some of the exogenous variables are identified in step (a) by performing stepwise regression over a number of potential exogenous variables and selecting the potential exogenous variables that provide a best fit (column 26, lines 30-35).

Regarding to claim 5, Gatto discloses at least some of the exogenous variables are identified in step (a) by modeling over a number of potential exogenous variables and selecting a set of the potential exogenous variables that tend to maximize predictive power of the modeling (column 19, lines 10-48).

Regarding to claim 6, Gatto discloses at least some of the exogenous variables are identified in step (a) by performing a statistical clustering technique (column 20, lines 8-46).

Regarding to claims 7-8, Gatto discloses the given point in time is after the time period; the given point in time is approximately 30 days after the time period ends (column 12, lines 1-37).

Regarding to claim 9, Gatto discloses the time period is determined using a stepwise approach (column 12, lines 1-37).

Regarding to claim 10, Gatto discloses the asset comprises a share of stock issued by a corporation, and wherein the time period is determined base on changes affecting the corporation (column 10, lines 20-52).

Regarding to claim 11, Gatto discloses duration of the time period is selected so as to maximize a predictive power of the formula over the time period (column 12, lines 1-37).

Regarding to claim 12, Gatto discloses the processing in step (i) comprises performing a statistical regression technique (column 11, lines 10-52).

Regarding to claim 13, Gatto discloses the processing in step (i) comprises performing a neural network technique (column 8, lines 3-40).

Regarding to claim 14, Gatto discloses the step (iii) comprises a step of (iii-1) determining a difference between the price estimate for the asset at the given point in time and the observed price for the asset at the given point in time (column 12, lines 37-53).

Regarding to claim 15, Gatto discloses the step (iii) further comprises a step of (iii-2) calculating a ratio of the difference determined in sep (iii-1) to the price estimate for the asset at the given point in time (column 12, lines 37-53).

Regarding to claim 16, Gatto discloses the step (iii) comprise determining a ratio of the price estimate for the asset at the given point in time to the observed price for the asset at the given point in time (column 12, lines 37-53).

Regarding to claim 17, Gatto discloses wherein the computer-executable process steps further include a step to: (iv) determine a measure of accuracy variability, over the time period, of the price estimated for the asset calculated using the formula (column 20, line 47-column 21, line 13).

Regarding to claim 18, Gatto discloses wherein the computer-executable process steps further include a step to: (v) determine a measure of a statistical significance of the similarity measure by comparing the similarity measure to the measure of accuracy variability (column 23, lines 8-67).

Regarding to claim 19, Gatto discloses step (v) comprises calculating a ratio of the similarity measure to the measure of accuracy variability (column 21, lines 3-10).

Regarding to claim 21, Gatto discloses the step (i) comprises steps to: (i-1) obtain a first formula for calculating price estimates for the asset as a function of macroeconomic variables; (i-2) obtain a second formula for calculating price estimates for the asset as a function of prices of other assets that are related to the asset; and (i-3) combine estimates from the first formula and the second formula to obtain the formula (column 24, lines 28-40).

Regarding to claim 22, Gatto discloses a step of using price estimates from the first formula to remove macroeconomic effects from price estimates calculated using the second formula (column 24, lines 40-55).

Regarding to claim 23, Gatto discloses wherein the computer-executable process steps further include a step to: (iv) repeating steps (ii) and (iii) for plural points in time after the time period ends in order to obtain plural similarity measures, and wherein the forecasting of step (c) is based on the plural similarity measures (column 24, lines 40-55).

Regarding to claim 24, Gatto discloses wherein the computer-executable process steps further include a step to: (v) calculating a central tendency of the plural similarity measures, and wherein the forecasting of step (c) is based on the central tendency (column 15, lines 10-62).

Regarding to claim 25, Gatto discloses wherein the computer-executable process steps further include a step to: (v) calculate a weighed average of the plural similarity

measures, and wherein the forecasting of step (c) is based on the weighed average (column 23, lines 8-22).

Regarding to claim 26, Gatto discloses wherein the computer-executable process steps further include a step to: (iv) repeating steps (i)-(iii) using different time periods, and wherein the forecasting in step (c) is based on the similarity measures determined by sing the different time periods (column 22, lines 4-33).

Regarding to claim 27, Gatto discloses the different time periods have approximately a same duration (column 22, lines 4-33).

Regarding to claim 28, Gatto discloses the different time periods include a time period ending approximately 30 days prior to the given point in time and a time period ending approximately 90 days prior to the given point in time (column 22, lines 4-33).

Regarding to claim 29, Gatto discloses wherein the computer-executable process steps further include a step to: (v) calculating a ratio of the similarity measure determined by using one of the time periods to the similarity measure determined by using an other of the time periods (column 20, line 59-column 21, line 21).

Regarding to claim 30, Gatto discloses the exogenous variables include prices of other assets that are similar to the asset (column 10, lines 19-52).

Claim 31 is written in means that parallel the limitations found in claim 1 above, therefore, is rejected by the same rationale.

Claim 32 is written in computer-readable medium that parallel the limitations found in claim 1 above, therefore, is rejected by the same rationale.

Regarding to claims 33-35, Gatto discloses wherein step (c) is performed by evaluating the similarity measure as a measurement of changes due to factors that are not accounted for by the exogenous variables (column 23, lines 1-67, see the adjustment factors) .

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gatto, U.S. Patent No. 6,681,211.

Regarding to claim 20, Gatto discloses the measure of accuracy variability comprises a standard error of the formula (column 20, lines 48-67 and columns 33-34). Gatto does not teach the standard error of the formula being a square root of an estimate of a variance of errors of the formula. However, calculating the standard error of a formula by a square root of an estimate of a variance of errors is well known in determining the standard error of a formula. Therefore, it would have been obvious to modify Gatto's to include the feature above for the purpose of providing more efficiency for determining the accuracy of a formula.

Conclusion

10. Claims 1-35 are rejected.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to examiner Nga B. Nguyen whose telephone number is (703) 306-2901. The examiner can normally be reached on Monday-Thursday from 9:00AM-6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hyung S. Sough can be reached on (703) 308-0505.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 306-1113.

12. Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

C/o Technology Center 3600

Washington, DC 20231

Or faxed to:

(703) 872-9326 (for formal communication intended for entry),

or

(703) 308-3691 (for informal or draft communication, please label "PROPOSED" or "DRAFT").

Hand-delivered responses should be brought to Crystal Park 5, 2451 Crystal Drive, Arlington, VA, Seventh Floor (Receptionist).

Nga B. Nguyen

Nga Nguyen

November 23, 2004